A new genus and two new species of apterous Pompilidae (Hymenoptera) from Southern Rhodesia

by

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In this paper a new species of *Pseudopedinaspis* Brauns and an interesting new genus of the Idopompilini are described. Apterism in the Pompilidae is of rare occurrence and is confined to a few genera, and is of particular interest on account of the marked alteration in the proportions of the thoracic segments which is correlated with this condition. There is an absolute, and not merely relative, elongation of the pronotum, and usually also of the epinotum, giving these insects such an unfamiliar appearance that their true affinities may easily be overlooked. Reid (Proc. Royal Ent. Soc. London, Vol. 8, 1939) has shown that the Mexican genus *Olixon* Cameron, placed by its author in the Braconidae, and by Ashmead in the Bethylidae, is a Homonotine Pompilid closely allied to *Psyllosphex* Arn. Similarly he gives reasons to show that *Algoa* Brues (*Algoella* Kieff) is another African genus related to *Psyllosphex*.

It is not altogether an idle speculation to inquire whether the elongation of the thorax precedes the reduction of the wings or the reverse, and whether the changes are a direct consequence of the nature and habits of the prey. It is obviously an advantage to those Pompilids which prey on web-spinning spiders to have well-developed wings, but those species which prey on spiders of the families Attidae, Thomisidae and Lycosidae, and have to seek them on the ground between tufts of grass and low herbage, would have less opportunity to use their wings. All the species of the genera *Teinotrachelus*, *Pseudoclavelia* and *Dromochares* which I have observed in life, fly only for short distances, the progress being chiefly a running or zig-zagging motion on the ground. I have not taken them with their prey, but there can be little doubt that the latter consists of roving spiders such as the Thomisidae, and for the movements required to catch such spiders a greater flexibility of the body is an advantage and would be brought about by an elongation of the thorax and abdomen (cf. snakes and lizards). In consequence of such a development, the gradual reduction of the wings from partial disuse would naturally follow. It is to be observed that in the Pompilid genera mentioned above, the wings are distinctly shorter than in other genera, and in *Dromochares* are so much reduced as to be barely functional.

Including *Pseudopedinaspis* Brauns, in which there are merely vestiges of wings, or none at all as in the species described below, the African apterous Pompilidae belong to the following genera: *Apteropompilus* Brauns, *Apteropompiloides* Arn. *Pseudopedinaspis* Brauns, *Psyllosphex* Arn. *Algoella* Kieff and the new genus *Herpetosphex* Arn. described below.

Subfam. **CTENOCERINAE.**

Pseudopedinaspis fasciatus n.sp. (figs. 1, 1a and b) ♀ 7 mm. long. Head and first five segments of the abdomen black, the last two abdominal segments dark brown, the apex of the sixth slightly reddish. Palpi, mandibles, extreme apical margin of the clypeus, antennae, thorax and legs, ferruginous. Head, mesopleurae and epinotum with a short, decumbent and greyish pubescence, very sparse on the head. Anterior third of the pronotum with a few long, erect black hairs. Apical margins of the 2nd—5th tergites with

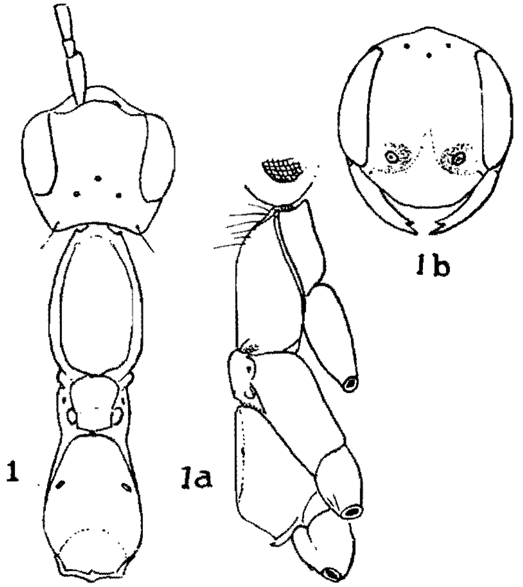

Fig. 1 and 1a, *Pseudopedinaspis fasciatus* ♀, head and thorax dorsal and lateral view. Fig. 1b, head (x 15).

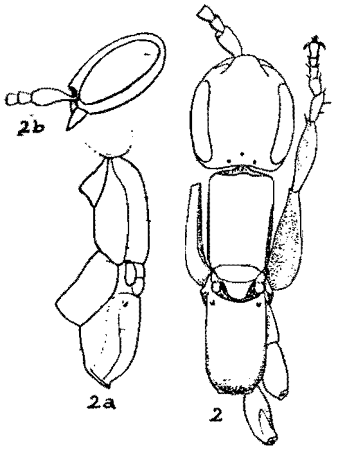

Fig. 2 and 2a, *Herpetosphex staphylinoides* ♀ dorsal and lateral views, head and thorax. Fig. 2b, head (x 18).

(In fig. 2, the head is not in its natural position, having been pressed down to give a frontal view, and the right leg has been pressed outwards to show the width of the femur).

fairly wide apical bands of pale golden pubescence, the first tergite with a round patch of similar pubescence on each side, the rest of the segments with a microscopic black pubescence. The sternites have a sparse greyish white pubescence. Head and pronotum shining and impunctate, the mesonotum almost smooth but with traces of a microscopic reticulation. Mesopleurae and epinotum somewhat dull, closely rugulose, the mesopleurae and sides of the epinotum obliquely so, the dorsum of the epinotum longitudinally rugulose in the middle but near the posterior margin transversely, like the declivity.

Mandibles narrow, the inner margin with a tooth near the acute apex. Clypeus and face like that of *P. sanguinolentus* Heym. (=*Neavei* Arn.) but the face is wider, being four and half times wider in the middle than one eye, and there is no raised zig-zag line between the posterior ocelli as in that species. Interocular distance on the vertex equal to the length of the first three joints of the flagellum. The second joint of the flagellum is as long as the third and twice as long as the first. Ocelli small, the posterior pair twice as far from each other as they are from the eyes.

Dorsum of the pronotum elliptical, a little more than twice as long as wide in the middle, the anterior third convex transversely and lengthwise, the posterior two-thirds flat, the sides subvertical and at their posterior upper angle raised into an elongate tubercle. Mesonotum and scutellum connate, forming a subcordate area, but a very faint line indicates the boundaries of the two parts. The anterior wings absent, but apparently represented by a white scale, measuring less than the diameter of the anterior ocellus. Caudad of this scale there is an oblong tubercle which may represent the roots of the hind wings. Epinotum separated from the scutellum by a deep impression. The dorsum of the epinotum obconical, twice as wide at the posterior margin as at the anterior, its junction with the flat and subvertical declivity narrowly rounded. First tergite a little wider behind than long. Sixth tergite conical, twice as wide at the base as long.

Khami, S. Rhodesia. 1 ♀ (*R. H. R. Stevenson*), climbing up a decayed tree-trunk full of Bostrychid galleries. Type in the National Museum, S. Rhodesia.

This species differs from the other two species of the genus, *sanguinolentus* Heymons and *Marshalli* Brauns in its much smaller size, and in having no rudimentary wings and no zig-zag raised line between the posterior ocelli.

Subfam. **POMPILINAE**

Tribe **Idopompilini**

HERPETOSPHEX gen. nov.

Characters: ♀ Maxillary palpi long, the last three joints united much longer than the first two joints of the flagellum. Mandibles with a small tooth on the inner margin behind the apex. Clypeus

very short, not quite as wide as the face and feebly convex. Face long, feebly convex, with a supra-antennal protuberance which lies in the same plane as the rest of the face. Scapes oval in cross-section, short; flagellum not very long, the first two joints not longer than wide. Ocelli small, the posterior pair close to the occipital margin, which is rounded at its junction with the vertex. Pronotum much longer than wide and many times longer than the mesonotum, its sides vertical. Wings absent, the tegulae forming an adnate flap. Scutellum longer than the mesonotum. Mesopleurae narrow, convex transversely and prominent dorsad. Epinotum long, slightly narrowed caudad, convex transversely, the dorsum and declivity forming a wide arc in profile. Abdomen long, lanceolate, widest behind the middle; sixth tergite convex, not transversely compressed. Coxae large, the anterior pair fully two-thirds as long as the femora (as in *Idopompilus*). Anterior femora very large, flattened on the inner face, the anterior tibiae somewhat swollen, the anterior tarsi without a distinct comb. All the tarsal joints are feebly spinose below. Claws of all the legs simple. Hind femora without pre-apical spines (lissoscelid type), hind tibiae with two short spines, wide apart, on the outer side, and three or four splayed-out spines at the apex.
Genotype *Herpetosphex staphylinoides* n.sp.

These characters, excepting the short second joint of the flagellum and the absence of wings and tarsal comb, are also common to *Pseudoclavelia* Haupt and there can be little doubt the two genera are related. The shape of the pronotum, the dilated anterior femora, and the short second joint of the flagellum, resemble those of *Teinotrachelus* Arn., but that genus differs in having a well-developed tarsal comb, a differently shaped clypeus, three irregular rows of spines on the hind tibiae, bifid claws and a dense decumbent pubescence.

Herpetosphex staphylinoides n.sp. (figs. 2, 2a and b) ♀ 5.5 mm. long. Black. Smooth, shining and without sculpture, covered with a sparse, grey and very fine pubescence, the outer side of the anterior femora with the pubescence longer and denser.

The clypeus face, and shoulders of the pronotum with a few short, black and erect hairs. Clypeus about seven times wider than long, the anterior margin straight. First and second joints of the flagellum as long as wide, the third joint two and a half times longer than the second. Face in the middle nearly three times wider than one eye. Pronotum slightly widened at the shoulders, otherwise parallel-sided, nearly twice as long as wide behind, the anterior face and the sides vertical, their junction with the dorsum narrowly rounded. Mesonotum three times wider than long, the scutellum fairly flat, nearly semi-circular, and one-third longer than the mesonotum. Postnotum obsolete. The epinotum is slightly narrowed caudad and nearly one and a half times longer than wide at the base. Abdomen widest across the third tergite, nearly three and half times longer than wide there. The first tergite is triangular, as wide behind as long, strongly narrowed towards the base.

Victoria Falls, S. Rhodesia. December; 1 ♀. Found running between the roots of grass, with a rapid wriggling motion. Type in the National Museum, S Rhodesia.